UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,535	12/28/2001	Nigel J. Tolson	034942-268	9807

7590 01/26/2006

Robert E Krebs
Thelen Reid & Priest LLP
PO Box 640640
San Jose, CA 95164-0640

EXAMINER	
CHOW, CHARLES CHIANG	
ART UNIT	**PAPER NUMBER**
2685	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/040,535	TOLSON, NIGEL J.	
	Examiner	Art Unit	
	Charles Chow	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-10* is/are allowed.

6)☒ Claim(s) *11 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

1. The claim identifier for claims 11, needs to be updated for "New".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tokuda et al. (US 6,035,213) in view of Rossi (US 5,587,924)

Regarding **claim 11**, Tokuda et al. (Tokuda) teaches a filter apparatus [fixed notch filter 108 in Fig. 13, col. 9, lines 31-60] comprising

wherein at least the fixed notch filter is operable to filter communications signals associated with a first wireless communication standard [the notch filter 108 is operated to suppress narrow band disturbance signals in a first wireless digital CDMA communication standard, col. 9, line 64 to col. 10, line 8, abstract].

It is well known that a notch filter can be implemented by using a twin-t filter network. Rossi teaches an active twin-T filter [50a in Fig. 5A] and a passive notch filter network [48a] coupled to the active twin-T filter [col. 6, lines 3-15 & Fig. 5A], so that two notches in the frequency response are produced & having a gain compensation to the decrease in signal strength [col. 6, line 9-12]. Therefore, it would have been obvious for an ordinary skill person to upgrade Tokuda's fixed notch filter 108 with Rossi's active twin-T cascaded with a passive notch filter, in order to obtain two notches and with a gain compensated signal strength.

Regarding **claim 12**, Tokuda teaches the said passive notch filter network [108] is operable to filter communication signals associated with a second wireless communication standard [the notch filter is operated to suppress narrow band disturbance signals associated with the dual mode system, to filtering a communication signal associated with a second wireless analog communication standard, col. 9, line 64 to col. 10, line 8; the analog system and digital CDMA system in abstract].

Allowable Subject Matter

3. The following is an examiner's statement of reasons for allowance:

The primary reference Murtojarvi (US 2002/0168,956A1) has later filing date than applicant's filing date 12/28/2001 (pages 3-4 of applicant's amendment) and Claims 8-10 are allowed in the previous office action.

Claims 1-10 are allowable over the prior art of record, the prior art fails to teach singly, particularly, or in combination, the subject matter, for the **first active twin-T filter** in a **first signal path defining a first sharp notch at the center of a second adjacent channel**; and a first passive twin-T filter section coupled to receive output of the first active twin-T filter, **defining a second sharp notch at the center of a next adjacent channel, to suppress spurious signals at frequencies of modulation product,** as shown in the independent claims 1, 6, 8, 11, for the miniature battery powered portable dual mode quadrature receiver (Fig. 1) for operating in different channel spacing, 30 to 200 KHz, in system for IS136, Amps, PCS, GSM, Edge frequency band, to efficiently removing unwanted image signal at the adjacent channel and next adjacent channel, by the sharper frequency response roll off characteristic of the twin-T filters. The dependent claims are also

allowable due to their dependency upon the independent claims and having additional claimed features.

The closest patent to **Jayaraman et al. (US 2003/0087,622 A1)** teaches a filter circuit apparatus (410c) for removing upper and lower adjacent channel interference ACI (Fig. 4, abstract, [0011-0014]) for the CDMA super heterodyne quadrature demodulation (Fig. 2, [0027, 0023-0026]. Jayaraman et al. fail to teach the passive twin-T filter is coupled to the active twin-T filter to provide a second sharper notch at the center of the next adjacent channel.

West (US 3,577,179) teaches a active twin-T filter 10 in cascading with active Twin-T filter 50, 60 for providing sharp frequency notch response [Fig. 1, notch response curve for stage 2 in Fig. 2; abstract, col. 1, lines 16-42). West fails to teach the passive twin-T filter is coupled to the active twin-T filter to provide a second sharper notch at the center of the next adjacent channel.

Other prior arts in below has been considered, but they fail to teach the above claimed features.

Murtojarvi (US 2002/0168,956 A1) teaches the active twin-T filter 8 coupled to the passive twin-T filter 10 (Fig. 7, [0066-0068]) for the sharper frequency notch filtering.

Anderson (US 3,579,135) teaches a twin-t notch filter (Fig. 1-6, abstract, col. 1, lines 5-53), the active bootstrapping topology configuration of the active twin-T filter, to sharpen up the filtering response curve (col. 4, line 5-20). Anderson teaches the improved stable active notch filtering network as shown in Fig. 2, with accuracy and efficiency for without tuning, for rejecting adjacent frequencies (col. 1, lines 11-32).

Daniels et al. (US 3,904,978) teaches the active twin-T filter for providing a fourth order transfer function for sharper attenuation of unwanted signal [abstract, Fig. 1, Fig. 6, col. 1, line 51 to col. 2, line 21].

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

4. Applicant's arguments with respect to claims 11-12 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's argument for reference Ross does not teach the communication signal to be filtered by the notch filter [page 3-4 of applicant amendment],

Tokuda et al. (US 6,035,213) teaches a dual mode system of the cellular telephone [abstract, Fig. 13] having a fixed notch filter 108 [Fig. 13, col. 9, lines 31-60], to filte a first communication signal associated with a first wireless digital CDMA communication standard, & a second wireless analog system standard, col. 9, line 64 to col. 10, line 8; the analog system and digital CDMA system in abstract].

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow CC

January 19, 2006.

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600